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MORPHOMETRICS, MOLT, CLOACAL TEMPERATURES AND ECTOPARASITES IN COLOMBIAN BIRDS

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Resumen
Se presenta los datos morfométricos, muda, temperaturas cloacales y ectoparásitos de 123 individuos de 57 especies de aves colombianas.

Abstract
Morphometric data, molt, cloacal temperatures and ectoparasites are presented for 123 individuos of 57 species of Colombian birds.

Weights and other morphological measurements of birds are essential to studies in a wide variety of disciplines. Karr, Wilson & Moriarty (1978) pointed out that weights of tropical birds could be used for testing hypotheses on a variety of ecological and evolutionary phenomena. Dunning (1984) listed recent studies in which bird weights have been used in avian physiology, ecology, morphology, community structure and theoretical modeling. A comprehensive review of the uses and potential of weights appeared in Clark (1979). Unfortunately these data are not always available from museum specimens.

This account reports the live weights, measurements and cloacal temperatures of 123 birds of 57 species in 1989 in Colombia. During examination of birds, molt and brood patches were recorded to ascertain breeding overlap with molt, as reported for some tropical species (Foster 1974, 1975).

Ectoparasites were also collected for further study.

Methods and study area

Birds were caught in mist nets, weighed with Pesola scales to the nearest 0.2 g, and cloacal temperatures were taken with a quick measuring Schultheis thermometer. Field work was conducted on 5-6 February at San Nicolas 2900 m at the Parque Nacional Puracé, Cauca, between 11 February and 14 March at the Reserva Natural La Planada, Nariño, and on 13 and 24 March at the Estación de Bombeo Guamués, 700 m near Orito, Putumayo.

At Puracé, birds were netted in woods and in trails parallel to the main road; at La Planada in several locations off the main trails and at Orito at the petroleum pumping station, where birds gathered to feed on insects attracted by the light left on all night.

Culmens were measured from the feathers to tip, tarsi from tibiotarsal joint to above the first toe, tails between the central feathers, and wings as the unflattened chord.

In Table 1, taxonomic sequence follows Meyer de Schauensee (1970).

Results

The number of birds per net was not calculated because nets were open and closed irregularly to avoid bird mortality due to constant rains, especially at La Planada. Here, even though average air temperature throughout the day was 18°C, (n= 16) some birds died easily due to the rains.

At Puracé, 21 birds ("P" in Table 1) were cuaght in 1.5 days of mist netting, while at La Planada 90 birds were captured, and 10 birds ("G" in Table 1) were caught at Guamués. At La Planada, the 2 *Semnornis ramphastinus* were captive birds that had died; they could have been underweight, and their tail measurements are probably short since the tail feathers were worn and battered.

MOLT AND BREEDING - Table 1 shows molt of body, tail and wing as well as presence or absence of brood patch. One *Grallaricula flavirostris* had in its oviduct an egg formed and ready to be laid.

ECTOPARASITES - Ectoparasites for these Colombian birds are indicated in Table 2; descriptions of new species and other details will appear in the future.

Single fleas (Order Siphonaptera) were identified by R. Traub as *Dasypsyllus gallinulae,* said to be the most widely ranging species known and infesting a variety of avian hosts. On each bird there were at least 2 fleas, but they moved through the feathers so rapidly that it was difficult to catch them with forceps. According to R. Traub (in litt.), fleas from South American birds are relatively little-known. They are found mainly on birds of highland, cold areas such as these Andean ones; *D. gallinulae* is northern, and the nominate form occurs in Europe.

Due to low temperatures, ticks (Acari) attached preferentially at the edge of the outer ear where they were protected by the feathers. Compared to birds from warmer climates in Brasil, few (in *Diglossa* and *Anisognathus*) were exposed just above the eyes.

Mites (Order Acari) were mostly found on body, wing and tail feathers, except for nose mites in hummingbirds (hitching rides between flowers) and for chiggers.

Lice (Suborder Mallophaga) eggs were mainly found on chin, lores, above eyes and top of the head, where difficult for the bird to preen.

Discussion

According to Table1, most birds presented body molt and many had finished molting the wing and tail feathers. Some species, mostly suboscines, still had brood patches, i. e., they were breeding or ending breeding in Feb. -March. Songbirds mostly lacked brood patches. The lack of brood patches in songbirds may indicate that they have short breeding seasons, ending well before March, in contrast to long breeding seasons in the forest suboscines. Willis (1990) suggested that songbirds regularly occupy seasonal habitats and, for this reason, have short reproductive periods that require much song and prevent males from incubating eggs. Hummingbirds may keep their brood patches all year long, so we are not certain they were breeding in February and March.

Adult lice and eggs were found both on breeding and nonbreeding birds. However, we were only able to study the birds early in the year rather than throughout the year or at the July-August peak of nesting (at La Planada, according to G. Cantillo). Thus, we could not verify ectoparasite relationships with molt and breeding seasons, which are likely to vary widely in an equatorial country like Colombia.

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Table 1. Measurements, molt, and cloacal temperatures of Colombian birds

	Sex	Wt.	Molt[1] b t w	Brood Patch	Bill	Tarsus	Tail	Wing	Cloacal Temp.
TROCHILIDAE									
Doryfera ludoviciae	M	7.1			3.6	0.5	3.5	6.1	
	M	5.9	+ –	–	3.8	0.3	3.7	6.2	
Phaethornis syrmatophorus		6.1	+ – –	+	3.9	0.5	7.0	6.3	
		6.0	+		3.8	0.4	6.8	5.8	
	M	6.2	–	–	3.8	0.3	7.0	6.0	
Colibrí coruscans P		8.5	+ – –	+	2.6	0.6	5.2	8.0	
Urochroa bougueri	M	12.5		–	3.2	0.6	5.2	8.5	41.4
	M	11.2	+ – –	–	3.1	0.5	5.1	8.1	39.7
Lafresnaya lafresnayi P		6.1	+ – –	+	2.8	0.5	4.0	6.3	
Coeligena wilsoni		6.7	– –	+	2.8	0.5	4.3	6.6	37.2
	F	6.5	+ – –		3.5	0.6	4.1	7.1	
	M	7.0	+ – –		3.6	0.2	4.3	7.0	
		6.9	+ +		3.6	0.5	3.8	6.6	
Heliangelus exortis P		4.8	+ + –		1.7	0.6	4.0	6.7	
Eriocnemis vestitus P	M	4.1	+ – –	+	1.8	0.6	4.2	6.1	
Haplophaedia lugens		6.0	+ – +	–	1.8	0.6	4.1	6.3	40.6
	F	6.9	+ – –	–	1.8	0.7	4.2	6.8	38.3
	F	8.8	+	+	1.9	0.5	4.1	6.1	
Metallura tyrianthina P	F	3.1	+ + +	+	1.2	0.6	3.2	5.1	
P	M	3.6	+ – –	+	1.2	0.6	4.0	5.9	
Aglaiocercus coelestis	M	5.0	+ – –	–	1.6	0.5	7.4	6.0	
	F?	5.0	+	–	1.4	0.5	4.0	5.6	
	M	4.7	+	–	1.5	0.5	4.1	5.3	
	F	4.7	+	–	1.6	0.5	4.2	5.6	
CAPITONIDAE									
Semnornis ramphastinus	M	99.5			2.3	3.2	6.5	9.4	
	M	73.0			2.0	2.5		10.1	
DENDROCOLAPTIDAE									
Xiphocolaptes promeropirhynchus		123.8	+ – –	+	4.6	3.4	10.8	13.7	34.8
FURNARIIDAE									
Synallaxis azarae	M	16.0	+	–	1.2	2.4	8.8	5.4	38.8
Premnoplex brunnescens	F	15.4	+ – –	+	1.6	2.0	5.5	5.9	40.0
Premnornis guttuligera		15.1	+ + –	–	1.4	2.0	6.3	6.6	42.0
Thripadectes virgaticeps		65.0	+		2.8	3.2	9.2	10.3	36.6
		66.5	+		2.4	3.2	8.6	10.1	
Sclerurus mexicanus		24.0	+ + –	–	2.5	2.4	5.6	7.7	40.7
FORMICARIIDAE									
Grallaria flavotincta		63.0	+ – –	–	2.5	5.0	4.5	9.6	39.0
Grallaricula flavirostris	F	18.0	+ – –	–	1.3	2.3	2.5	6.7	
	M	19.5	+	+	1.5	2.5	2.8	7.2	
	F	21.5	+ – –	+	1.4	2.3	2.7	6.7	

COTINGIDAE									
Pipreola riefferii		52.0	+	+	1.3	2.6	7.0	9.3	38.2
		44.9	+	–	1.4	2.4	7.1	9.1	40.0
		51.0	– –	+	1.2	2.8	7.1	9.6	
Pachyramphus versicolor	F	15.4	– –	+	1.1	1.8	4.6	6.3	41.0
PIPRIDAE									
Masius chrysopterus	F	12.0	– –	–	0.8	1.8	4.0	5.9	38.6
		12.0	– – –	–	0.8	2.0	4.2	6.1	37.6
	F	12.8	+	–	0.8	1.7	4.1	5.8	40.2
		7.0	+	+	0.9	1.8	4.1	5.9	39.5
TYRANNIDAE									
Myiophobus flavicans	M	12.9	+ – –	–	1.2	1.8	5.5	6.8	41.1
	F	11.4	+		1.2	1.8	5.5	6.4	
Platyrinchus mystaceus	F	9.0	+ – –	–	1.1	1.3	2.9	5.6	38.4
Rhynchocyclus fulvipectus	M	11.4		+	1.4	1.8	6.6	7.7	39.0
Tyranniscus cinereiceps		9.5	– – –	–	0.9	1.6	5.2	6.1	37.6
Mionectes striaticollis	M	14.5		+	1.2	1.9	4.8	7.0	
HIRUNDINIDAE									
Notiochelidon murina P		12.1	+ – –	–	0.6	2.0	5.7	11.5	
TROGLODYTIDAE									
Troglodytes aedon G		15.0	+ – –	–	1.3	1.9	4.2	5.6	40.2
G		17.5	+ – –	+	1.2	1.9	4.4	5.8	40.1
G		14.5	– – –		1.2	2.0	3.7	5.4	40.8
Henicorhina leucophrys		18.2			1.5	2.5	2.8	5.7	
		15.5	+ – –	–	1.5	2.7	2.5	5.8	37.3
		18.2	– –	–	1.5	2.5	2.6	5.5	38.4
TURDIDAE									
Myadestes ralloides		32.0	+ – –	–					38.4
		31.0		–	1.1	2.1	7.2	8.5	37.8
		28.0	—	–	1.1	2.4	7.2	8.8	37.2
		27.0							
Catharus ustulatus		28.0	– –	–	1.2	3.1	6.8	10.2	41.6
Turdus fuscater P		130.5	+ – –	–	2.9	4.8	14.0	15.2	
Turdus ignobilis G	F	68.0	+ – –	+	2.0	2.6	8.1	11.2	41.8
G	M?	63.0		–	1.9	2.8	8.7	11.8	42.3
VIREONIDAE									
Vireo leucophrys	F	11.3		–	1.0	1.7	4.6	6.7	37.2
	F	12.0	–		1.2	1.9	4.5	6.5	37.7
		11.5	– – –	–	1.0	1.8	4.8	6.8	38.4
PARULIDAE									
Dendroica fusca	F	9.8	+	–	1.0	1.9	4.5	6.6	41.6
	F?	9.0	+ – –	–	1.0	1.7	4.5	6.4	41.2
Basileuterus tristriatus	M	12.3	+ – –	–	1.2	2.2	5.3	6.1	36.9
	M	13.0	+ – –	–	1.2	2.2	5.5	6.3	37.0
	M	12.5	– –	–	1.2	2.1	5.7	6.9	37.8
COEREBIDAE									
Diglossa albilatera P		11.0	+ +	–	1.0	2.0	4.9	6.1	
P		10.2	+ – +	–	1.0	1.9	4.8	5.8	
	M	8.7	– – –	–	0.9	2.0	4.9	6.0	37.4
		9.5	– –	–	0.9	2.0	4.9	6.0	39.4
Diglossa cyanea P		17.2	+ – +	–	1.6	2.9	5.9	7.2	
P		16.5	+ – –	–	1.4	2.3	5.6	7.1	

THRAUPIDAE									
Euphonia xanthogaster	*M*	*13.7*	*+ + –*	*–*	*0.8*	*1.7*	*3.4*	*6.2*	*37.2*
		14.9	*– –*	*–*	*0.9*	*1.6*	*3.6*	*6.6*	*38.9*
		14.0		*–*	*0.8*	*1.5*	*3.2*	*6.0*	*41.5*
	F	*13.7*	*+*	*–*	*0.8*	*1.1*	*3.2*	*6.0*	*40.7*
Cholorochrysa phoenicotis	M	21.5			1.2	2.2	4.2	7.3	40.8
Tangara arthus	M	20.0			1.1	1.8	5.1	7.8	40.0
	F	19.1	+ – –	+	1.0	1.9	4.7	7.1	41.8
	F	19.0	+	–	1.1	1.9	5.8	7.7	40.5
		18.0	+ – +	–	1.1	1.3	4.6	7.0	40.3
		21.5	+ – –		1.0	1.8	4.7	7.7	39.6
Tangara vassorii P		19.0	+ – –	–	0.8	2.0	5.2	7.9	
Tangara labradorides	M	14.1		–	0.9	1.8	4.9	6.6	39.0
	M	14.5			1.0	1.8	4.5	6.5	39.8
		12.9	+	–	1.0	1.8	4.5	6.2	40.8
Tangara nigroviridis	F	16.1			0.8	1.8	4.5	6.6	41.4
Iridisornis rufivertex P		25.0	+ – –	–	1.0	2.4	7.8	8.5	
Anisognathus lacrymosus P		43.0	+ –	–	1.3	2.7	7.8	9.8	
Anisognathus flavinucha		43.0		–	1.6	2.4	7.0	9.1	42.0
		50.0	–		1.9	1.5	7.0	9.2	
		41.4	+	–	1.7	2.4	6.8	8.8	41.0
Thraupis episcopus G	F	35.0	+ +	–	1.4	2.1	6.6	9.2	42.5
Thraupis cyanocephala	F	34.0	+ +	–	1.4	2.4	6.8	8.6	40.8
	M	32.0	– – –	–	1.3	2.5	6.9	8.7	41.0
Creurgops verticalis	F	22.1	+	+	1.4	2.1	6.5	7.2	42.4
FRINGILLIDAE									
Tiaris olivacea	F	9.0	+ – –	–	0.9	1.9	3.8	5.1	41.0
Atlapetes pallidinucha P		34.0	+ + +		1.2	3.1	7.8	8.0	
P		37.0	+	–	1.3	3.7	8.3	8.3	
Atlapetes schistaceus P		27.0	+ + –	–	1.2	2.9	8.6	8.0	
Myospiza aurifrons G	F	18.4	+ – –	–	1.2	2.3	4.5	6.2	40.6
G	M	19.0	+ – –	–	1.2	2.2	4.4	6.2	38.0
G	M	18.0	+ – –	–	1.2	2.2	4.5	6.1	40.4
G	M	19.0	+ + –	–	1.2	2.3	4.4	6.2	40.5
Zonotrichia capensis P		26.0	+ +	–	1.3	2.7		6.7	
P	lm	21.0	+ – –	–	1.2	2.4	5.1	6.6	
P		21.5	+ + –	–	1.3	2.4	5.0	6.7	
		28.0	– –	–	1.2	2.2	5.5	6.5	37.4
		22.0	+	–	1.2	2.3	5.9	6.7	40.9
		19.5	– –	–	1.3	2.3	5.4	6.8	41.4
		20.5	– –	–	1.2	2.4	5.3	6.1	39.0
		19.5		–	1.3	2.2	5.3	6.3	40.2
		23.0	+ – –	–	1.3	2.4	5.4	6.6	42.0
		22.5	+ – –	–	1.3	2.4	5.5	6.7	38.6
		22.1	+ – –	–	1.4	2.3	5.6	6.6	41.5

1. b = body, t = tail, w = wing.
Weight in grams; measurements in centimeters; cloacal temperatures in degrees centigrades.
Presence of molt denoted by "+" and explicit absence by "–".
P= Parque Nacional Puracé; G= Estación de Bombeo Guamués; rest are from Reserva La Planada.

Table 2. Ectoparasites on Colombian birds.

Bird	Flea	Tick[1]	Chigger	Nose Mite	Mite[2]	Lice[2]
Phaetornis syrmatophorus				+		
Colibri coruscans					+	
Lafresnaya lafresnayi				+	+	
Coeligena wilsoni					E	
Heliangulus exortis				+		
Haplophaedia lugens				+	E	
Metallura tyrianthina				+	+	
Aglaiocercus coelestis						EN
Semnornis ramphastinus					+	
Xiphocolactes promeropirhynchus					E	
Synallaxis azarae						A
Thripadectes virgaticeps						AE
Premnornis guttuligera		R				
Grallaria flavotincta	+			+		
Grallaricula flavirostris						AE
Platyrinchus mystaceus						A
Mionectes olivaceus					+	E
Notiochelidon murina						+
Myadestes ralloides					+	
Catharus ustulatus					+	A
Turdus ignobilis			+			E
Vireo leucophrys						A
Dendroica fusca					+	E
Basileuterus tristriatus						AE
Diglossa albilatera		L				E
Diglossa cyanea					+	
Euphonia xanthogaster	+					
Tangara arthus					+	AE
Tangara vassorii					E	
Tangara nigroviridis						E
Iridosornis rufivertex						E
Anisognathus lachrymosus		EL				
Anisognathus flavinuchus					AE	
Thraupis cyanocephala					AE	
Atlapetes pallidinucha	E					
Atlapetes schistaceus	E					
Zonotrichia capensis			+	+		

[1] R = rump; L = eyelid;
E = ear

[2] A = adult; N = nymph;
E = egg